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3 October 1997

# AGREEMENT

CONCERNING THE ADOPTION OF UNIFORM TECHNICAL PRESCRIPTIONS FOR WHEELED VEHICLES, EQUIPMENT AND PARTS WHICH CAN BE FITTED AND/OR BE USED ON WHEELED VEHICLES AND THE CONDITIONS FOR RECIPROCAL RECOGNITION OF APPROVALS GRANTED ON THE BASIS OF THESE PRESCRIPTIONS */

(Revision 2, including the amendments entered into force on 16 October 1995)

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**Addendum 8: Regulation No. 9**

**Revision 2**

Incorporating:

01 series of amendments - Date of entry into force: 17 February 1974
02 series of amendments - Date of entry into force: 1 June 1980
03 series of amendments - Date of entry into force: 1 October 1982
04 series of amendments - Date of entry into force: 23 July 1984
05 series of amendments - Date of entry into force: 26 January 1994

UNIFORM PROVISIONS CONCERNING THE APPROVAL OF THREE-WHEELED VEHICLES WITH REGARD TO NOISE

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**UNITED NATIONS**

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*/ Former title of the Agreement:

Agreement Concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts, done at Geneva on 20 March 1958.

GE.97-24357

Regulation No. 9

# UNIFORM PROVISIONS CONCERNING THE APPROVAL OF THREE-WHEELED VEHICLES WITH REGARD TO NOISE

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ANNEXES

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Annex 2 : Arrangements of approval marks

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1. SCOPE

This Regulation contains provisions relating to the noise emitted by three-wheeled power-driven vehicles.

2. DEFINITIONS

For the purposes of this Regulation,

2.1. "Approval of a vehicle" means the approval of a vehicle type with regard to noise;

2.2. "Vehicle type" means a category of motor vehicles which do not differ in such essential respects as:

2.2.1. the lines and constituent materials of the body (more particularly the engine compartment and its soundproofing);

2.2.2. the length and width of the vehicle;

2.2.3. the type of engine (petrol or diesel; two-stroke or four-stroke); number and capacity of cylinders; number of carburettors; arrangement of valves; maximum horse-power and corresponding engine speed (r.p.m.) etc.; and

2.2.4. number and ratios of gears;

2.3. "Silencing system" means a complete set of components necessary for limiting the noise made by a motor vehicle and its exhaust;

2.4. "Silencing systems of different types" means silencing systems which differ in such essential respects as:

2.4.1. that their components bear different trade names or marks;

2.4.2. that the characteristics of the materials constituting a component are different or that the components differ in shape or size;

2.4.3. that the operating principles of at least one component are different;

2.4.4. that their components are assembled differently.

2.5. "Silencing system component" 1/ means one of the individual constituent parts whose assembly constitutes the silencing system.

3. APPLICATION FOR APPROVAL

3.1. The application for approval of a vehicle type with regard to noise shall be submitted by its manufacturer or by his duly accredited representative.

3.2. It shall be accompanied by the undermentioned documents in triplicate and the following particulars:

3.2.1. a description of the vehicle type with regard to the items mentioned in paragraph 2.2. above. The numbers and/or symbols identifying the engine type and the vehicle type shall be specified;

3.2.2. a list of the components, duly identified, constituting the silencing system;

3.2.3. a drawing of the assembled silencing system and an indication of its position on the vehicle;

3.2.4. detailed drawings of each component to enable it to be easily located and identified, and a specification of the materials used.

3.3. At the request of the technical service conducting approval tests, the vehicle manufacturer shall, in addition, submit a sample of the silencing system.

3.4. A vehicle representative of the vehicle type to be approved shall be submitted to the technical service conducting approval tests.

4. MARKINGS

4.1. The components of the silencing system shall bear:

4.1.1. The trade name or mark of the manufacturer of the silencing system and of its components; and

4.1.2. the trade description given by the manufacturer.

4.2. Such markings shall be clearly legible and indelible.

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1/ These components are, in particular, the exhaust manifold, the exhaust piping, the expansion chamber, the silencer proper, etc. If the engine intake is equipped with an air filter and the filter's presence is essential to ensure observance of the prescribed sound-level limits, the filter must be regarded as a component of the "silencing system" and bear the marking prescribed in paragraphs 3.2.2. and 4.1.

5. APPROVAL

5.1. If the vehicle type submitted for approval pursuant to this Regulation meets the requirements of paragraphs 6. and 7. below, approval of that vehicle type shall be granted.

5.2. An approval number shall be assigned to each type approved. Its first two digits (at present 05 corresponding to the 05 series of amendments, which entered into force on 26 January 1994) shall indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation at the time of issue of the approval. The same Contracting Party shall not assign the same number to the same vehicle type equipped with another type of silencing system or to another vehicle type.

5.3. Notice of approval or of extension or refusal of approval of a vehicle type pursuant to this Regulation shall be communicated to the Parties to the Agreement which apply this Regulation by means of a form conforming to the model in annex 1 to this Regulation and of drawings of the silencing system (supplied by the applicant for approval) in a format not exceeding A4 (210 x 297 mm), or folded to that format, and on an appropriate scale.

5.4. There shall be affixed, conspicuously and in a readily accessible place specified on the approval form, to every vehicle conforming to a vehicle type approved under this Regulation an international approval mark consisting of:

5.4.1. a circle surrounding the letter "E" followed by the distinguishing number of the country which has granted approval 2/; and

5.4.2. the number of this Regulation, followed by the letter "R", a dash and the approval number, to the right of the circle prescribed in paragraph 5.4.1. above.

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2/ 1 for Germany, 2 for France, 3 for Italy, 4 for the Netherlands, 5 for Sweden, 6 for Belgium, 7 for Hungary, 8 for the Czech Republic, 9 for Spain, 10 for Yugoslavia, 11 for the United Kingdom, 12 for Austria, 13 for Luxembourg, 14 for Switzerland, 15 (vacant), 16 for Norway, 17 for Finland, 18 for Denmark, 19 for Romania, 20 for Poland, 21 for Portugal, 22 for the Russian Federation, 23 for Greece, 24 (vacant), 25 for Croatia, 26 for Slovenia, 27 for Slovakia, 28 for Belarus, 29 for Estonia, 30-36 (vacant and 37 for Turkey. Subsequent numbers shall be assigned to other countries in the chronological order in which they ratify or accede to the Agreement concerning the Recognition of Approval for Motor Vehicle Equipment and Parts, and the numbers thus assigned shall be communicated by the Secretary-General of the United Nations to the Contracting Parties to the Agreement.

5.5. If the vehicle conforms to a vehicle type approved, under one or more other Regulations annexed to the Agreement, in the country which has granted approval under this Regulation, the symbol prescribed in paragraph 5.4.1. need not be repeated; in such a case the additional numbers and symbols of all the Regulations under which approval has been granted in the country which has granted approval under this Regulation shall be placed in vertical columns to the right of the symbol prescribed in paragraph 5.4.1.

5.6. The approval mark shall be clearly legible and be indelible.

5.7. The approval mark shall be placed close to or on the vehicle data plate.

5.8. Annex 2 to this Regulation gives examples of arrangements of approval marks.

6. SPECIFICATIONS

6.1. General specifications

6.1.1. The vehicle, its engine and its silencing system shall be so designed, constructed and assembled as to enable the vehicle, in normal use, despite the vibration to which it may be subjected, to comply with the provisions of this Regulation.

6.1.2. The silencing system shall be so designed, constructed and assembled as to be able to resist the corrosive action to which it is exposed.

6.2. Specifications regarding sound levels

6.2.1. Methods of measurement

6.2.1.1. The noise made by the vehicle type submitted for approval shall be measured by the two methods described in annex 3 to this Regulation for the vehicle in motion and for the vehicle when stationary. 3/

6.2.1.2. The two values measured in accordance with the provisions of paragraph 6.2.1.1. above shall be entered in the test report and on a form conforming to the model in annex 1 to this Regulation.

6.2.1.3. The sound level measured by the method described in annex 3, paragraph 3.1. to this Regulation when the vehicle is in motion shall not exceed (for new vehicles and new silencing systems) 82 dB(A).

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3/ A test is made on a stationary vehicle in order to provide a reference value for administrations which use this method to check vehicles in use.

7. MODIFICATION AND EXTENSION OF APPROVAL OF A VEHICLE TYPE OR A TYPE OF SILENCING SYSTEM

7.1. Every modification of the vehicle type or of the silencing system shall be notified to the administrative department which approved the vehicle type. The said department may then either:

7.1.1. consider that the modifications made are unlikely to have an appreciable adverse effect; or

7.1.2. require a further test report from the technical testing service.

7.2. Confirmation or refusal of approval, specifying the alterations, shall be communicated to the Parties to the Agreement applying this Regulation in accordance with the procedure specified in paragraph 5.3. above.

7.3. The competent authority issuing the extension of approval shall assign a series number for such an extension and inform thereof the other Contracting Parties to the 1958 Agreement applying this Regulation by means of a communication form conforming to the model in annex 1 to this Regulation.

8. CONFORMITY OF PRODUCTION

8.1. Every vehicle bearing an approval mark as prescribed under this Regulation shall conform to the vehicle type approved, be fitted with the silencing system with which it was approved and satisfy the requirements of paragraph 6. above.

8.2. In order to verify conformity as prescribed in paragraph 8.1. above, a vehicle, bearing the approval mark required by this Regulation, shall be taken from the series. Production shall be deemed to conform to the requirements of this Regulation if the levels measured do not exceed by more than 1 dB(A) the limits prescribed in paragraph 6.2.1.3. above.

9. PENALTIES FOR NON-CONFORMITY OF PRODUCTION

9.1. The approval granted in respect of a vehicle type pursuant to this Regulation may be withdrawn if the requirements laid down in paragraph 8. above are not complied with, or if the vehicle fails to pass the tests provided for in paragraph 8.2. above.

9.2. If a Party to the Agreement which applies this Regulation withdraws an approval it has previously granted, it shall forthwith so notify the other Contracting Parties applying this Regulation by means of a communication form conforming to the model in annex 1 to this Regulation.

10. PRODUCTION DEFINITELY DISCONTINUED

If the holder of the approval completely ceases to manufacture a vehicle or a silencing system approved in accordance with this Regulation, he shall so inform the authority which had granted the approval. Upon receiving the relevant communication, that authority shall inform thereof the other Parties to the Agreement applying this Regulation by means of a communication form conforming to the model in annex 1 to this Regulation.

11. TRANSITIONAL PROVISIONS

11.1. As from the official date of entry into force of the 05 series of amendments, no Contracting Party applying this Regulation shall refuse to grant ECE approval under this Regulation as amended by the 05 series of amendments.

11.2. As from 1 October 1994, Contracting Parties applying this Regulation shall grant ECE approvals only if the vehicle type to be approved meets the requirements of this Regulation as amended by the 05 series of amendments.

11.3. Contracting Parties applying this Regulation shall not refuse to grant extensions of approval to the preceding series of amendments of this Regulation.

11.4. Contracting Parties applying this Regulation shall, at the manufacturer's request, continue to grant approvals to those types of vehicles which comply with the requirements of this Regulation as amended by the preceding series of amendments until 1 October 1994 only.

11.5. ECE approvals granted under this Regulation before 1 October 1994 and all extensions of such approvals, including those to a preceding series of amendments of this Regulation granted subsequently, shall remain valid indefinitely. When the vehicle type approved to the preceding series of amendments meets the requirements of this Regulation as amended by the 05 series of amendments, the Contracting Party which granted the approval shall notify the other Contracting Parties applying this Regulation thereof.

11.6. No Contracting Party applying this Regulation shall refuse national type approval of a vehicle type approved to the 05 series of amendments to this Regulation or meeting its requirements.

11.7. Until 1 October 1994, no Contracting Party applying this Regulation shall refuse national type approval of a vehicle type approved to the preceding series of amendments to this Regulation.

11.8. As from 1 October 1995, Contracting Parties applying this Regulation may refuse first national registration (first entry into service) of a vehicle which does not meet the requirements of the 05 series of amendments to this Regulation.

12. NAMES AND ADDRESSES OF TECHNICAL SERVICES CONDUCTING APPROVAL TESTS, AND OF ADMINISTRATIVE DEPARTMENTS

The Parties to the Agreement which apply this Regulation shall communicate to the United Nations Secretariat the names and addresses of the technical services responsible for conducting approval tests and of the administrative departments which grant approval and to which forms certifying approval or extension or refusal or withdrawal of approval or production definitely discontinued, issued in other countries, are to be sent.

Annex 1

COMMUNICATION

(Maximum format: A4 (210 x 297 mm))

issued by: Name of administration:

.....
.....
.....

Concerning: 2/ APPROVAL GRANTED
APPROVAL EXTENDED
APPROVAL REFUSED
APPROVAL WITHDRAWN
PRODUCTION DEFINITELY DISCONTINUED

of a vehicle type with regard to its noise emission pursuant to Regulation No. 9

Approval No. ..... Extension No. .....

1. Trade name or mark of the vehicle .....

2. Vehicle type .....

3. Manufacturer's name and address .....

4. If applicable, name and address of manufacturer's representative .....

.....
.....

5. Kind of engine: e.g., positive-ignition, compression ignition, etc. 3

.....

6. Cycles: two-stroke or four-stroke (if applicable) .....

7. Cylinder capacity (if applicable) .....

8. Engine power (state how measured) .....

9. Engine speed at which maximum power is developed ..... rpm

10. Number of gears .....

11. Gears used .....

12. Final drive ratio(s) .....

13. Type and dimensions of tyres (by axle) .....

14. Maximum permissible weight including semi-trailer (where applicable)

.....

15. Brief description of the silencing system .....

.....

16. Load conditions of vehicles during test .....

17. For stationary vehicle test: location and orientation of the microphone (by reference to diagrams in annex 3 - appendix) .....

18. Sound levels:

Vehicle in motion ..... dB(A) at steady speed

before acceleration of ..... km/h

Vehicle stationary ..... dB(A) with engine running

at ..... rpm.

19. Deviations in calibration of sound level meter .....

20. Vehicle submitted for approval on .....

21. Technical service responsible for conducting approval tests .....

.....

22. Date of report issued by that service .....

23. Number of report issued by that service .....

24. Approval granted/extended/refused/withdrawn 2/

25. Position of approval mark on the vehicle .....

26. Place .....

27. Date .....

28. Signature .....

20. The following documents, bearing the approval number shown above, are annexed to this communication:

drawings, diagrams and plans of the engine and of the silencing system;
photographs of the engine and of the silencing system;
list of components, duly identified constituting the silencing system.

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1/ Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation).

2/ Strike out what does not apply.

3/ If a non-conventional engine is used, this should be stated.

Annex 2

ARRANGEMENTS OF APPROVAL MARKS

Model A

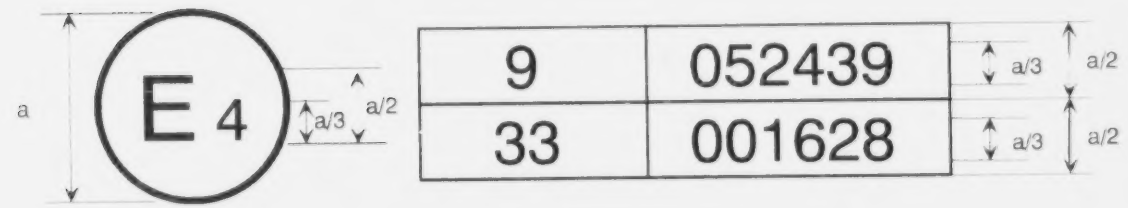
(See paragraph 5.4. of this Regulation)

a = 8 mm min.

The above approval mark affixed to a vehicle shows that the vehicle type concerned has, with regard to its noise emission, been approved in the Netherlands (E 4) pursuant to Regulation No. 9 under approval No. 052439. The approval number indicates that the approval was granted according to the requirements of Regulation No. 9 as amended by the 05 series of amendments.

Model B

(See paragraph 5.5. of this Regulation)




a = 8 mm min

The above approval mark affixed to a vehicle shows that the vehicle type concerned has been approved in the Netherlands (E 4) pursuant to Regulations Nos. 9 and 33. 1/ The approval numbers indicate that, at the date when the respective approvals were given, Regulation No. 9 included the 05 series of amendments and Regulation No. 33 was still in its original form.

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1/ The second number is given merely as an example.

Annex 3

METHODS AND INSTRUMENTS FOR MEASURING THE NOISE MADE BY MOTOR VEHICLES

1. MEASURING INSTRUMENTS

1.1. A sonometer of high quality shall be used. Measurement shall be carried out with a weighting network and a time constant conforming to curve A and the "fast response" time as specified in Publications 651 (1979), "Precision sonometers" of the International Electrotechnical Commission (IEC) concerning the characteristics of sound-level meters.

1.2. The instrument shall be calibrated at frequent intervals and, if possible, before each measuring test.

2. CONDITIONS OF MEASUREMENT

2.1. Measurements shall be performed on unladen vehicles and, except in the case of non-separable vehicles, without trailer or semi-trailer, in a sufficiently silent and open area (ambient noise and wind noise at least 10 db(A) below the noise being measured). The above-mentioned area may take the form, for instance, of an open space of 50 m radius having a central part of at least 20 m radius, practically level, consisting of concrete, asphalt or similar material, and not covered with powdery snow, tall grass, loose soil or ashes.

2.2. The surfacing of the runway shall be such as not to cause excessive tyre noise. This condition applies only to measurement of the noise made by vehicles in motion.

2.3. Measurement shall be carried out in fine weather with little wind. Any sound peak which appears to be unrelated to the characteristics of the general sound level shall be ignored in taking the readings.

2.4. Before the measurements are started, the engine shall be brought to its normal operating regime as regards:

2.4.1. temperatures;

2.4.2. tuning;

2.4.3. fuel;

2.4.4. spark plugs, carburettor(s) and other parts.

3. METHODS OF MEASUREMENT

3.1. Measurement of noise of vehicles in motion

3.1.1. Positions for the test

3.1.1.1. At least two measurements shall be made on each side of the vehicle. Preliminary measurements may be made for adjustment purposes, but shall be disregarded.

3.1.1.2. The microphone shall be situated 1.2 m ± 0.1 m above ground level at a distance of 7.5 m ± 0.2 m from the path of the vehicle's centre line, measured along the perpendicular (PP') to that line (Fig. 1).

3.1.1.3. Two lines, AA' and BB', parallel to line PP' and situated respectively 10 m forward and 10 m rearward of that line shall be marked out on the test runway. The vehicle shall approach line AA' at a steady speed as specified below. The throttle shall then be fully opened as rapidly as practicable and held in the fully-opened position until the rear of the vehicle crosses line BB'; the throttle shall then be closed again as rapidly as possible.

3.1.1.4. In the case of articulated vehicles consisting of two non-separable units regarded as a single vehicle, the semi-trailer shall be disregarded in determining when line BB' is crossed.

3.1.1.5. The maximum sound level recorded shall constitute the result of the measurement.

3.1.2. Determination of the steady speed

3.1.2.1. Vehicle with no gearbox

The vehicle shall approach line AA' at a steady speed corresponding either, in terms of engine speed (r.p.m.), to three-quarters of the engine speed at which the engine develops its maximum power, or to three-quarters of the maximum engine speed permitted by the governor, or to 50 km/h, whichever is the lowest.

3.1.2.2. Vehicle with a manually-operated gearbox

If the vehicle is fitted with a two-speed, a three-speed or a four-speed gearbox, the second gear shall be used. If the vehicle has more than four speeds, the third gear shall be used. If, by following the above procedure, the engine speed developed exceeds its maximum permissible regime, the first higher gear which ensures that this regime is no longer exceeded should be used instead of the second or third gear. Auxiliary step-up ratios ("overdrive") shall not be engaged. If the vehicle is fitted with a differential with two gear ratios, the ratio selected shall be that allowing the highest vehicle speed. The vehicle shall approach line AA' at a steady speed corresponding either, in terms of engine speed, to

three-quarters of the engine speed at which the engine develops the maximum power or to three-quarters of the maximum engine speed permitted by the governor, or to 50 km/h, whichever is the lowest.

3.1.2.3. Vehicle with an automatic transmission

The vehicle shall approach the line AA' at a steady speed of 50 km/h or at three-quarters of its maximum speed, whichever is the lower. Where several forward-drive positions are available, that position shall be selected which results in the highest mean acceleration of the vehicle between lines AA' and BB'. The selector position which is used only for engine braking, parking or similar slow manoeuvres shall not be used.

3.2. Measurement of noise of stationary vehicles

3.2.1. Sonometer position

3.2.1.1. Measurements shall be made at point X shown in Fig. 2 at a distance of 7 m ± 0.2 m from the nearest surface of the vehicle.

3.2.1.2. The microphone shall be situated 1.2 m ± 0.1 above ground level.

3.2.2. Number of measurements

At least two measurements shall be made.

3.2.3. Vehicle test conditions

3.2.3.1. The engine of a vehicle without a speed governor shall be run at three-quarters of the r.p.m. speed at which, according to the vehicle manufacturer, it develops its maximum power. The r.p.m. speed of the engine shall be measured by means of an independent instrument, e.g. a roller bed and a tachometer. If the engine is fitted with a governor preventing it from exceeding the speed at which it develops its maximum power it shall be run at the test speed given by the governor.

3.2.3.2. The maximum sound level recorded shall constitute the result of the measurement.

4. INTERPRETATION OF RESULTS

4.1. The measurements shall be considered valid if the difference between the two consecutive measurements on the same side of the vehicle is not more than 2 dB(A).

4.2. The figure recorded shall be that corresponding to the highest sound level. Should that figure exceed by more than 1 dB(A) the maximum sound level authorized for the category of vehicle tested, a second series of two measurements shall be made. Three out of the four results so obtained must fall within the prescribed limits.

4.3. To allow for lack of precision in the measuring instrument the figures read from it during measurement shall each be reduced by 1 dB(A).

Annex 3 - Appendix

MEASURING POSITIONS FOR VEHICLES IN MOTION

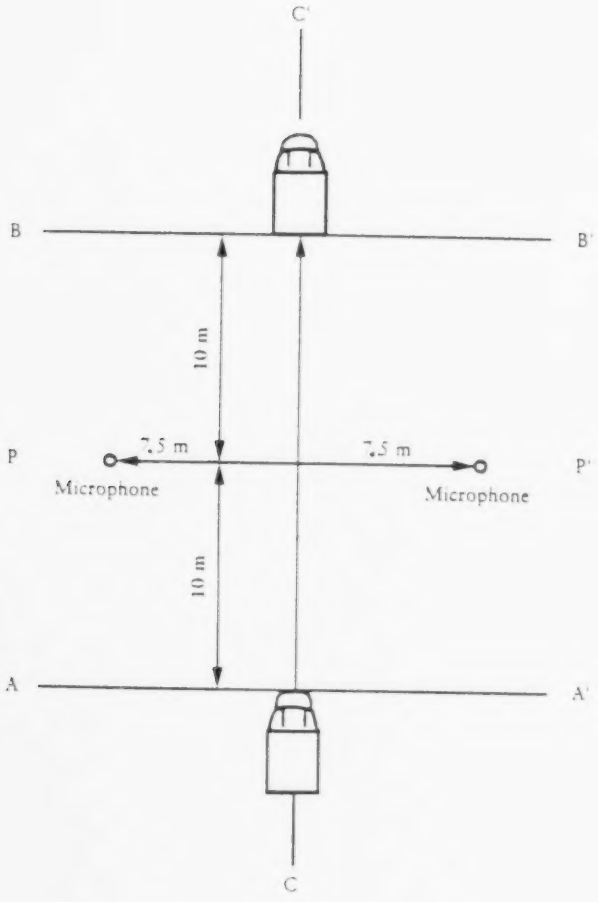


Figure 1

MEASURING POSITIONS FOR STATIONARY VEHICLES

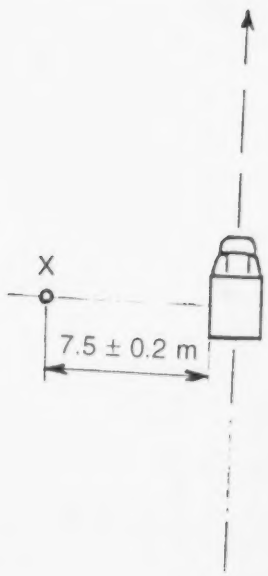


Figure 2